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HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1936.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY

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IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY

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Abstracts in the present number are by :

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HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY
FOR THE YEAR 1936.

Vol. V, Part I.

1—American Journal of Diseases of Children.

- a. SOBEL, I. P., 1936.—“Sporadic trichinosis in children.” 51 (2), 367-388.

2—American Journal of Hygiene.

- a. OTTO, G. F., 1936.—“Human infestation with the dwarf tapeworm (*Hymenolepis nana*) in the Southern United States.” 23 (1), 25-32.
- b. KELLER, A. E., LEATHERS, W. S. & JENSEN, M. H., 1936.—“An investigation of hookworm infestation in thirty-six counties of Kentucky.” 23 (1), 33-45.
- c. CHANDLER, A. C., 1936.—“Studies on the nature of immunity to intestinal helminths. III. Renewal of growth and egg production in *Nippostrongylus* after transfer from immune to non-immune rats.” 23 (1), 46-54.
- d. LAMSON, P. D. & BROWN, H. W., 1936.—“Methods of testing the anthelmintic properties of ascaricides.” 23 (1), 85-103.
- e. CAMPBELL, D. H., 1936.—“Active immunization of albino rats with protein fractions from *Taenia taeniaeformis* and its larval form *Cysticercus fasciolaris*.” 23 (1), 104-113.
- f. OTTO, G. F., 1936.—“Localized centers of hookworm disease in Kentucky and North Carolina.” 23 (1), 157-168.
- g. KELLER, A. E. & LEATHERS, W. S., 1936.—“The incidence and distribution of *Ascaris lumbricoides*, *Trichuris trichiura*, *Hymenolepis nana* and *Hymenolepis diminuta* in thirty-six counties in Kentucky.” 23 (2), 216-230.
- h. SPINDLER, L. A., 1936.—“Resistance of rats to infection with *Nippostrongylus muris* following administration of the worms by duodenal tube.” 23 (2), 237-242.
- i. BEACH, T. D., 1936.—“Experimental studies on human and primate species of Strongyloides. V. The free-living phase of the life cycle.” 23 (2), 243-277.
- j. CORT, W. W., 1936.—“Studies on schistosome dermatitis. I. Present status of the subject.” 23 (2), 349-371.
- k. TALBOT, S. B., 1936.—“Studies on schistosome dermatitis. II. Morphological and life history studies on three dermatitis-producing schistosome cercariae, *C. elvae* Miller, 1923, *C. stagnicolae* n. sp., and *C. physellae* n.sp.” 23 (2), 372-384.
- l. CORT, W. W. & TALBOT, S. B., 1936.—“Studies on schistosome dermatitis. III. Observations on the behavior of the dermatitis-producing schistosome cercariae.” 23 (2), 385-396.
- m. HEATHMAN, L. S., 1936.—“Laboratory diagnosis in trichinosis.” 23 (2), 397-409.

(2a) *Hymenolepis nana* is very unevenly distributed in the United States and is most frequent in school children of the mountain districts in the south east where the incidence reaches 9% to 10%. Infection is probably acquired by the ingestion of comparatively fresh faeces. Negroes have a somewhat lower infection rate than whites. R.T.L.

(2b) In 6 only out of the 36 counties of Kentucky is hookworm prevalence sufficiently great to constitute a public health problem. These counties are situated in the sandy eastern section of the State. There has been a striking diminution in the degree of hookworm infestation since the Rockefeller Sanitary Commission's work in 1912-14. R.T.L.

(2c) Chandler has transferred adult *Nippostrongylus*, from the intestines of rats in which egg production had ceased, to clean rats. Later he transferred undersized adults and larvae, from immune rats in which they were meeting a strong resistance, to clean rats. In each case growth and egg production began again and proceeded normally. He concludes therefore that the unfavourable environment had had no permanent ill effect on the parasites and that this bears out the theory that the immunity of white rats to *Nippostrongylus* is due to lack of normal nutrition for the worms. P.A.C.

(2d) Lamson & Brown discuss methods which have been used in *in vitro* experiments for determining the efficiency of anthelmintics, and describe in detail an *in vitro* method for the testing of anthelmintics against *Ascaris*. The various methods of testing anthelmintic activity in animals and man are also reviewed, and the authors conclude that in human ascariasis and hookworm disease the Stoll egg-counting method gives the most satisfactory results. R.H.H.

(2e) Campbell has immunized rats against infection with *C. fasciolaris* by means of intraperitoneal injections of *T. taeniaeformis*. The globulin, nucleoprotein, saline-soluble and insoluble fractions and the albumins from fresh worms produced a very high degree of resistance. Albumins from dried worms and metaproteins gave no protection. The total immunity seemed to be composed of two factors, one of which developed early and the other late and these seemed to vary independently of each other. P.A.C.

(2g) A study of helminth infections in Kentucky shows that no reduction in the incidence of ascariasis has accompanied a considerable lowering of the hookworm infection rate. Habits favourable to soil pollution and a low standard of personal hygiene are responsible for this state of affairs. Anthelmintic treatment alone is not effective but even in mountainous regions improvement in the disposal of excreta has proved effective, but only where applied to all the members of a household. R.T.L.

(2h) The presence of adult *Nippostrongylus muris* in the intestine of rats produces some resistance to the attainment of maturity of worms resulting from later infection by percutaneous invasion. This resistance, however, did not affect the rate of growth of the worms but only the output of the sexually mature females. The trapping of larvae in the lungs in superinfection is associated with, if not due to, the prior passage of larvae. R.T.L.

(2i) After reviewing the literature on heterogenesis in *Strongyloides*, Beach describes his experiments on culturing the free-living stages of *S. stercoralis* and *S. simiae* in numerous media. *S. simiae* which follows the indirect life-cycle in faeces, was found to display the "mixed" type in many media, producing numerous males and filariform larvae but few or no females. The progeny of a single parasitic female, isolated from a monkey *post mortem*, were also mixed. In Locke's solution development was predominantly indirect, and in half-strength Locke's predominantly direct. Of the ingredients of Locke's, K Cl is absolutely essential. Three successive generations of free-living adults were produced in media, and this phenomenon may occur in nature. Parthenogenesis was not observed in the free-living females. It would appear that the type of life-history is not predetermined in the egg, but is controlled by environmental factors. B.G.P.

(2j) Cort reviews the literature since he first demonstrated in 1928 that non-human schistosome cercariae could penetrate the human skin and produce a dermatitis with papular eruptions. The observations of various observers indicate that the penetration of the cercariae of human schistosomes seldom produces significant dermatitis while at least 5 non-human schistosome cercariae have been shown experimentally to produce dermatitis in man. The clinical and pathological data of these cases are summarised and the geographical distribution is reviewed. The control of the infective snails can be effected by the use of copper sulphate only where the snails inhabit shallow waters. R.T.L.

(2k) Talbot describes the morphology of *Cercaria elvae*, *C. stagnicolae* n. sp. and *C. physellae* n. sp. which are remarkably similar in structure. Attempts to obtain adults by infecting ducks, herring gulls, pigeons, rats and mice were unsuccessful. R.T.L.

(2l) The behaviour of four non-human schistosome cercariae, which produce dermatitis in man, is described and contrasted. It was easily possible to identify each species by their behaviour although their morphological characters are remarkably alike. R.T.L.

(2m) In Miss Heathman's opinion precipitins and skin antibodies do not occur sufficiently early or regularly in human cases of trichinosis to be of great diagnostic aid. The eosinophile count, muscle biopsy and examination of the meat suspected as the source of infection give more reliable data. Intradermal tests in man and animals are less clean cut and are more difficult to read in trichinosis than in other diagnostic intradermal tests. R.T.L.

3—American Journal of Public Health.

- a. CAMERON, T. W. M., 1936.—"Parasites of animals and the public health in North America." 26 (1), 46-50.

(3a) Cameron discusses the parasites of man in relation to domestic and wild animals, selecting examples from North America to illustrate the accidental or essential involvement of man in the life-cycle of various arthropods, helminths, protozoa, and also of the vampire bat which is at once an ectoparasite and a vector of diseases. B.G.P.

4—American Journal of Tropical Medicine.

- a. FAUST, E. C. & HEADLEE, W. H., 1936.—“Intestinal parasite infections of the ambulatory white clinic population of New Orleans.” 16 (1), 25-38.
- b. BYRD, E. E., 1936.—“On the incidence of intestinal parasites in 537 individuals on the relief rolls in the city of Athens, Georgia, and vicinity.” 16 (1), 39-45.
- c. JOHNSTONE, H. G., 1936.—“The chemotherapy of *Dirofilaria immitis*.” 16 (2), 207-224.

(4c) Complete disappearance from the peripheral blood of the microfilariae of *Dirofilaria immitis* in four dogs followed, within a short time, the intramuscular injection of fatal doses of Fouadin, but the effect on the adult worms in the heart and pulmonary artery was negligible. The numerous injections which have to be given over an extended period are somewhat reduced if the injections are given intravenously. No effect either on microfilariae or adult worms followed the use of Carbarson, hexylresorcinol, trypan blue or sodium-iodo-antimonite. No marked diminution in numbers of microfilariae occurred in dogs after Roentgen irradiation. R.T.L.

5—Annales d'Oculistique.

- a. JOYEUX, C., SÉDAN, J. & ESMÉNARD, J., 1936.—“Filariose oculaire ; lésions conjonctivales dans un cas d'onchocercose contracté à la Côte d'Ivoire.” 173 (2), 100-110.

(5a) Formerly considered characteristic of American onchocerciasis, ophthalmic complications of the disease are now recorded from the French and Belgian Congos and the Ivory Coast. Figures are given for such complications in the Belgian Congo, viz., in 72 cases out of 3,448 or 2.1%. Blindness may result. Similar cases are recorded from Kenya, the Sudan and Egypt. A case is described here in detail from the Ivory Coast. The writers regard the granulating conjunctivitis found in cases such as this as due to microfilarial invasion following subcutaneous onchocerciasis and complicated by a dermatitis on the left hand and forearm. The entire syndrome is considered to resemble the filarial dermatitis known as “Gale filarienne” or “Craw craw”. S.G.S.

6—Annales de Parasitologie Humaine et Comparée.

- a. STEFANSKI, W. & STRANKOWSKI, M., 1936.—“Sur un cas de pénétration du strongle géant dans le rein droit du chien.” 14 (1), 55-60.
- b. SKRJABIN, K. J. & SCHIKHOBALOVA, N. P., 1936.—“Contribution au remaniement de la classification des nématodes de l'ordre des Filariata Skrjabin 1915.” 14 (1), 61-75.
- c. CALLOT, J., 1936.—“Trématodes du Sud Tunisien et en particulier du Nefzaoua.” 14 (2), 130-149.
- d. DAWES, B., 1936.—“Sur une tendance probable dans l'évolution des trématodes digénétiques.” 14 (2), 177-182.

(6b) Discussing the classification of the Filariata, Skrjabin & Schikhobalova give a differential key to the six subfamilies of the Filariidae followed by keys to the genera in each subfamily. Finally there is a brief key differentiating the three families of the Order: Dracunculidae, Cystopsidae and

Filariidae. Of the eight subfamilies of Filariidae recognized by Yorke & Maplestone, the Crassicaudinae have already been transferred to the Spirurata, and the Micropleurinae to the Dracunculidae; in the present paper the subfamily Loainae is suppressed on the grounds that cuticular bosses do not constitute a sufficiently reliable character, and a new subfamily Tetracheilonematinae is erected for *Tetracheilonema* and *Squamofilaria* (= *Coronofilaria*). The Onchocercinae are considered as possibly an artificial group.

B.G.P.

(6c) Four apparently new cercariae and a metacercaria are recorded by Callot from Nefzaoua in south Tunis, where also *Schistosoma haematobium* occurs in *Bullinus contortus* and is extremely common in man.

R.T.L.

(6d) Discussing the phylogeny of the digenetic trematodes, Dawes considers it likely that the amphistomes are more closely similar to the ancestral digenetic form than are the distomes. Probable ancestral features are the posterior position of the ventral sucker, recalling the posterior attachment organs of Monogenea, the ventral position of the genital pore, and the dorsally placed, small, excretory bladder. The position of the ventral sucker in distomes can be regarded as due to excessive development of the dorsal surface relative to the ventral, the gonads coming to lie in what is, in effect, a posterior pouch.

B.G.P.

7—Annals of Applied Biology.

- a. JOHNSON, L. R., 1936.—“Trials of mercuric chloride for the prevention of potato sickness.” 23 (1), 153-163.

(7a) Johnson describes the effects on *Heterodera schachtii* and on the growth and yield of potatoes in “potato sick” soil of dressings of mercuric chloride in solutions of 1 in 250, 1 in 500 and 1 in 1,000 and in the form of a dry dressing raked into the surface soil. Laboratory experiments showed that the cyst contents were not killed by mercuric chloride although fungous diseases were absent from the treated plots. The degree of eelworm infestation of the plants was materially reduced by these treatments especially when only a short period elapsed between treatment and the time of planting, and this was accompanied by marked increase in yield. Mercuric chloride applied six weeks before planting has a direct toxic effect on the early growth of the plants, but the variety “Great Scot” withstands this effect better than varieties “Eclipse” and “Majestic.”

M.J.T.

8—Annals and Magazine of Natural History.

- a. BAYLIS, H. A., 1936.—“Some parasitic worms from the British Cameroons.” (Ser. 10), 17 (98), 257-272.
 b. SRIVASTAVA, H. D., 1936.—“A rare parasite of the family Monorchidae Odhner, 1911, from an Indian fresh-water fish (*Ophiocephalus punctatus*).” (Ser. 10), 17 (98), 319-324.
 c. BAYLIS, H. A., 1936.—“A new ascarid from a bat.” (Ser. 10), 17 (99), 360-365.

(8a) Eleven parasites collected by the Percy Sladen Trust Expedition to the British Cameroons 1932-33 are described and of these three nematodes

are recorded as new species, viz., *Syphacia obubra* from *Anomalurus fraseri*, *Theileriana denticulata* from *Procavia dorsalis* and *Setaria sandersoni* from the duiker *Phalantomba melanorhea*.
R.T.L.

(8b) Srivastava describes *Asymphylogora indica* n. sp., near *A. macrostoma*, and also discusses the validity of *A. macrostoma* as distinct from *A. tincae*.
E.M.S.

(8c) A fourth species of the genus *Toxocara* named *T. pteropodis* n. sp. is described from the fruit-bat *Pteropus geddiei* in the New Hebrides. It differs from *T. canis* and *T. mystax* in the extreme narrowness of the cervical alae and in the shortness of the spicules. There is no reason to suppose that the only other ascarid in bats, viz., *Ascaris cynonycteridis* Parona 1889, belongs to this genus.
R.T.L.

9—Archiv für Schiffs- und Tropen-Hygiene.

- a. MÜHLENS, P., 1936.—“Ein Fall von *Onchocerca volvulus* bei einem Deutschen aus Kamerun.” 40 (1), 28-32.
- b. TEICHLER, G., 1936.—“*Mikrofilaria bancrofti* in Bauchzyste und Hydrozele.” 40 (1), 32-34.

10—Archives de l'Institut Pasteur d'Algérie.

- a. MONFORT, R., 1936.—“Le parasitisme intestinal chez les Indigènes sédentaires de Beni Ounif (Sud oranais).” 14 (1), 62-65.

(10a) *Ascaris lumbricoides*, *Hymenolepis nana* and *Trichuris trichiura* only were seen by Monfort during a sojourn of three years at Beni Ounif. R.T.L.

11—Archives de l'Institut Pasteur de Tunis.

- a. ANDERSON, C. & GOBERT, E., 1936.—“Sur la présence, en Tunisie, de *Schistosoma bovis*. Infection naturelle de *Bullinus contortus*.” 25 (1), 55-57.

12—Archivio Italiano di Scienze Mediche Coloniali.

- a. FADDA, S., 1936.—“Primi dati sull'organizzazione sanitaria delle regioni occupate nel nord dell'Abissinia.” 17 (1), 52-56.
- b. MARIANI, G. & BESTA, B., 1936.—“La blatta orientale serbatoio di protozoi ed elminti.” 17 (3), 177-184.

(12a) In giving a brief account of the rapidly improvised sanitary organization and of the principal diseases met with in the region of northern Abyssinia already occupied by the Italians, Fadda mentions that nearly 100% of the indigenous people are infected with intestinal helminths, mainly *Taenia saginata*, *Ascaris* and *Oxyuris*, but also hookworm and *Strongyloides*.
B.G.P.

(12b) Mariani & Besta have examined the intestinal contents of 93 *Periplaneta orientalis* captured in Italian Somaliland in order to ascertain whether parasitic protozoa and helminthic eggs were carried by this insect. *Trichuris* eggs were found in 5 and *Ascaris* in 1. *Oxyurid* eggs in 12 cockroaches probably pertained to species infesting the cockroach itself. [The paper is mainly concerned with the protozoa found.]
B.G.P.

13—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

- a. DÉVÉ, F., PIAGGIO-BLANCO, R. & GARCÍA-CAPURRO, F., 1936.—“Echinococcose hépatique maligne micropolykystique infiltrante. Forme intermédiaire entre l'échinococcose hydatique et l'échinococcose alvéolaire.” 8 (1), 3-28.
- b. MORALES-MENOUD, E., 1936.—“Un caso de *Taenia solium* en el Uruguay.” 8 (2), 125-126.

14—Australian and New Zealand Journal of Surgery.

- a. BARNETT, L., 1936.—“Deaths from hydatid disease.” 5 (3), 205-211.
- b. HAILES, W. A., 1936.—“Hydatid disease of the brain, with report of a case.” 5 (3), 212-218.

15—Australian Veterinary Journal.

- a. ROSS, I. C., 1936.—“The passage of fluids through the ruminant stomach. III. The effects of volume of fluid and the site of stimulation on the reflex closure of the oesophageal groove. With a note on the influence of size of dose on anthelmintic efficiency.” 12 (1), 4-8.

(15a) Ross suggests that when sheep are dosed with a solution of copper sulphate the closure of the oesophageal groove is due to the contact of the solution with the buccal and pharyngeal mucous membrane. This does not take place when the drug is administered by means of a stomach tube and the fluid is therefore carried to the rumen. Also a decrease in the volume of the dose results in a smaller proportion of the fluid finding its way directly to the abomasum but two small doses administered at 5 seconds interval results in the second getting to the abomasum following the closure of the oesophageal groove by the first dose.

D.O.M.

16—Boletín Mensual de la Clínica de la Asociación de Damas de La Covadonga.

- a. KOURI, P. & ANIDO, V., 1936.—“El parasitismo intestinal en los asociados de la clínica ‘Damas de la Covadonga’.” 3 (1), 2-9.

17—British Medical Journal.

- a. TEMPLETON, W. L., 1936.—“Cysticercosis and epilepsy.” [Correspondence.] No. 3913, 32.
- b. DICK, J. C., 1936.—“Cerebral cysticercosis simulating epilepsy.” No. 3920, 364.

18—Bulletin de l'Académie de Médecine.

- a. MAROTEL, 1936.—“Un nouveau parasite, une nouvelle maladie: ‘La distomose intestinale porcine’.” 115 (10), 440-442.

(18a) Marotel describes as *Harmostomum suis* n. sp. a new fluke, present in the small intestine in large numbers, and associated with a mortality of 30% amongst 1,200 pigs at Mateur in Tunis. The eggs which are operculated measure 25-30 μ by 13-15 μ and are of a light brown colour. The only species reported hitherto from mammals occurs in the hedgehog. R.T.L.

19—Bulletin de la Société Médico-Chirurgicale de l'Indochine.

- a. MASSIAS, C., 1936.—"Tuberculose en Cochinchine, étude dans deux provinces, comparaison avec le paludisme, le bérubéri, l'ankylostomiase, la syphilis." 14 (1), 22-27.

20—Bulletin de la Société de Pathologie Exotique.

- a. BERGHE, L. VAN DEN, 1936.—"Sur le polymorphisme des oeufs de *Schistosoma haematobium* et la présence d'oeufs du type bovin dans les infections de l'homme au Katanga (Congo Belge)." 29 (1), 41-46.
 b. ROUSSEAU, L., 1936.—"Stéphanurose porcine en Guyane française." 29 (1), 46-47.
 c. TISSEUIL, J., 1936.—"Filaire de Bancroft en Guyane: statistique, rôle pathologique." 29 (1), 47-49.
 d. JAME, GIRAUD & CROSNIER, 1936.—"Un cas de polyparasitose d'origine exotique." 29 (1), 49-55.
 e. JOYEUX, C., BAER, J. & MARTIN, R., 1936.—"Sur quelques cestodes de la Somalie-Nord." 29 (1), 82-96.
 f. MEYER-MAY, J., 1936.—"Ascaridiose et radiologie." 29 (2), 141-145.
 g. POISSON, H., 1936.—"Note sur la filariose des Toho malgaches." 29 (3), 343.

(20a) From a discussion of the validity of *Schistosoma mattheei* infections in man, van den Berghe is led to conclude that the case is not proven and that such infections may relate to a polymorphic form of *S. haematobium*. He found eggs of the *mattheei* shape, together with those of the *haematobium* shape, in six persons in Katanga, and he compares a frequency-distribution curve of egg lengths based on 1,450 eggs from one of these six cases, with corresponding curves for normal *S. haematobium* and (bovine) *S. mattheei* eggs. This curve, while showing a greater range of variation than the other two, is smooth and regular, instead of showing the double peak that would be expected in a mixed infection of the other two. B.G.P.

(20e) Joyeux, Baer & Martin describe the following new species from birds and mammals of Somaliland: *Cotugnia meleagridis* n. sp., *C. polyacantha* var. nov. *oligorchida*, *Idiogenes bucorvi* n. sp., *Choanotaenia abassenae* n. sp., *Dipylidium otocyonis* n. sp., *Paruterina daouensis* n. sp., *Hymenolepis recurvirostrae* var. nov. *agnosacco*. *Cysticercus ovis* occurs in sheep, *Raillietina echinobothrida* and *R. cesticillus* are common in domestic fowls, *Hymenolepis microstoma*, *H. fraterna* and *H. diminuta* occur in *Mus orientalis*, while *Taenia hydatigena*, *T. serialis*, *T. pisiformis*, *Echinococcus granulosus*, *Dipylidium caninum*, and *Mesocestoides lineatus* are all found in domestic dogs. E.M.S.

(20g) An unnamed species of *Filaria* is recorded in the peritoneal cavity of *Eleotris legendrei* in Madagascar. There also occurred in this host a fluke which Salvat (1914) had referred to the genus *Fasciolopsis*. R.T.L.

21—Canadian Field Naturalist.

- a. EKBAUM, E., 1936.—"Notes on the genus *Cystidicola* in Canadian fishes." 50 (1), 8-11.

(21a) The species of *Cystidicola* are readily distinguished by the character of the polar filaments of the egg. Ekbaum describes *C. walkeri* Ekbaum, and for comparison gives notes on *C. stigmatura* and *C. serrata*. E.M.S.

22—Canadian Journal of Research. Section D. Zoological Sciences.

- a. CAMERON, T. W. M., 1936.—“Studies on the endoparasitic fauna of Trinidad mammals. II. Additional parasites from Trinidad deer.” 14 (1), 1-5.
- b. SWALES, W. E., 1936.—“Schistosome dermatitis in Canada. Notes on two causative agents and their snail hosts in Manitoba.” 14 (1), 6-10.
- c. MILLER, M. J., 1936.—“*Bunoderina eucaliae* gen. et sp. nov., a new papillose Alloeoadiidae from the stickleback.” 14 (2), 11-14.

(22a) Descriptions are given of three nematode species obtained from deer (*Mazama simplicicornis*) of Trinidad, viz., *Setaria bidentata* (Molin), *Eucyathostomum longesubulatum* (Molin) and an unnamed *Oxyuris*. R.T.L.

(22b) Swimmers' itch or dermatitis acquired at Clear Lake, Manitoba is due to cercariae of schistosome type which develop in *Lymnaea stagnalis jugularis* and *Stagnicola emarginata canadensis*. The cercaria in *Lymnaea* is *C. elvae* while that in *Stagnicola* is apparently new and the most common cause of the dermatitis. Swales discusses the results previously obtained at Clear Lake by McLeod. R.T.L.

23—Chinese Medical Journal.

- a. KAU, Z. M., 1936.—“Chronic filariasis of the spermatic cord. Report of three cases.” 50 (1), 40-45.
- b. CH'ENG, Y. L. & K'ANG, H. J., 1936.—“Cysticercosis cellulosa in man. (Report of a case with very severe infestation, especially of the brain).” 50 (2), 137-139.

24—Chinese Medical Journal Supplement.

- a. KAU, L. S. & WU, K., 1936.—“Preliminary report on histopathology of paragonimiasis in cats in China.” No. 1, 101-105.
- b. CH'IN, K. Y., 1936.—“*Ascaris* in liver causing fatal hemorrhage. Report of a case.” No. 1, 119-124.
- c. HU, C. H. & HOEPLI, R. J. C., 1936.—“The migration route of *Spirocerca sanguinolenta* in experimentally infected dogs.” No. 1, 293-311.
- d. FENG, L. C., 1936.—“The development of *Microfilaria malayi* in *A. hyrcanus* var. *sinensis* Wied.” No. 1, 345-367.
- e. CHEN, H. T., 1936.—“Further notes on the life history of *Paragonimus* from rats.” No. 1, 368-378.
- f. KAN, H. C., 1936.—“Intracutaneous test with *Schistosoma japonicum* antigen. (A preliminary report).” No. 1, 387-393.
- g. KHAW, O. K. & CHEU, S. H., 1936.—“The treatment of dog heart-worm (*Dirofilaria immitis* Leidy 1856) with some organic antimony compounds.” No. 1, 402-417.
- h. ROBERTSON, R. C., 1936.—“The transmission in China of helminths by vegetables.” No. 1, 418-422.
- i. CAMPBELL, H. E., WEBSTER, J. L. A. & LI, S. Y., 1936.—“Human sparganosis in the Foochow area.” No. 1, 423-433.
- j. WATT, J. Y. C., 1936.—“Study on the bionomics of the intermediate host of *Schistosoma japonicum* in Kutang, Chekiang 1934-35.” No. 1, 434-441.
- k. WU, K., 1936.—“Distribution of paragonimiasis in China. I. Chekiang Province.” No. 1, 442-448.
- l. KAN, H. C. & KUNG, J. C., 1936.—“Incidence of Schistosomiasis japonica in an endemic area in Chekiang.” No. 1, 449-456.
- m. HSÜ, H. F., 1936.—“Check list [of] parasitic helminths of animals and man in China.” [to be continued.] No. 1, 457-473.

(24a) In the vicinity of Shaohing wild and domestic cats are naturally infected with paragonimiasis. Kau & Wu have succeeded in infecting cats experimentally by feeding with cysts from naturally infected *Potamon* crabs. Heavy infections occur in man in the same region but post-mortem material is practically unprocureable. The disease progresses very slowly and insidiously resembling, in many features, tuberculosis but does not produce total disablement in many instances. A detailed description, illustrated by micro-photos, is given of the macroscopical and histological lesions of the lungs and of the changes in the bronchial mucosa. Ova have also been noted in the lymph nodes accompanied by fibrosis of the capsule and the stroma. Inflammatory changes occurred throughout the gland, the sinuses were dilated and filled with red cells. The follicles were few and atrophic. R.T.L.

(24c) By feeding dogs with the encapsuled larvae of *Spirocerca sanguinolenta* obtained from hedgehogs Hu & Hoeppli have studied the route of migration of the larvae to the aortic wall. They differ from Hiyeda & Faust (1929) and claim from the results obtained from 12 experimental animals that the larvae after entering the gastric wall proceed to the coronary, gastro-epiploic and coeliac arteries and the upper abdominal and lower thoracic portions of the aorta. Finally these larvae reach the upper thoracic aorta. Their migration from the thoracic aorta to the oesophagus was not studied owing to the length of time which this final stage requires. R.T.L.

(24d) The metamorphosis of *Microfilaria malayi* has been followed by Feng in *Anopheles hyrcanus* var. *sinensis* at 29-32°C. The microfilariae leave the mosquito's stomach and appear in its body cavity within three hours. Migration to the muscles is completed by the tenth hour. The infective stage is attained on or about the sixth day. There are two moults in the mosquito. The cellular changes at each stage are described and an interesting diagram is given correlating the structures seen in the embryo with those found later in the infective larva. The structure of the larval stage is also carefully delineated in four plates. R.T.L.

(24e) In and around Ue Lok Chuen in South China *Mus norvegicus* is frequently found naturally infected with *Paragonimus*, but pigs in the same region are negative. The first intermediate host is *Assiminea lutea* and the second intermediaries are *Sesarma dehaani* and *S. sinensis*. The egg, miracidium, first and second generations of rediae and the cercaria and metacercaria are described and illustrated and compared with those reported from elsewhere. R.T.L.

(24f) As in many cases of *Schistosoma japonicum* repeated faecal examinations are negative although there are marked symptoms, Kan has sought for a more convenient method in the intracutaneous test using adult *Schistosoma japonicum* antigen. In 624 persons 423 were positive. In 48.6% of these the result agreed with the clinical findings and 60.4% agreed with the results of the faecal examinations. Of 26 doubtful cases 9 had schistosome ova in their faeces. The antigen was prepared from powdered dried worms extracted for one week with 1:10 normal sodium carbonate solution containing 1% phenol, using 100 parts of phenolized sodium carbonate solution to 1 part of the dry powder. The suspensions were separated by centrifuging at 3,000 r.p.m. for 30 minutes. One part of the supernatant fluid was then

diluted with 31 parts of normal saline giving 1 of dried powder in 3,200 parts of diluents. The author regards the test as of a preliminary character and considers a further trial necessary. R.T.L.

(24g) Dogs with *Dirofilaria immitis* infection were injected intramuscularly with concentrated Fouadin, Antimosan and Neo-Antimosan. All three drugs appeared to destroy the microfilariae and some, but not all, of the adult worms. The female worms which survived were sterilized. Thrombosis or infarcts were caused by the weak or dead worms. The drugs caused toxic reactions in curative doses and there were fatty changes in all the internal organs. In an addendum it is stated that 11 cases of human filariasis were treated with concentrated Fouadin without result. R.T.L.

(24h) Robertson gives a list, with their Chinese names, of the chief vegetable dishes which are eaten raw or partially cooked in China. All are fertilized by the use of human or animal excreta and act as very important agents for the mechanical transmission of helminth parasites. R.T.L.

(24i) Case reports are given of five instances of sparganosis seen by the authors during the past nine years at Foochow. Two were cases of orbital sparganosis and a history of the application of freshly killed frog was obtained in four cases. This Chinese custom is common in the Foochow area. R.T.L.

(24j) The bionomics of *Oncomelania* snails have been studied by Watt throughout a whole year in an endemic area of schistosomiasis at Kutang, Chekiang. Snails collected in the spring and autumn survived desiccation for more than nine weeks under laboratory conditions, but when placed in the sun for seven hours in dry petri dishes only a few revived. There are two breeding periods in the year. The infection rate varies with the season and the highest rate, which was less than 4%, occurs in the spring and in the autumn, while the lowest rate occurs in July and January. R.T.L.

(24k) In addition to the known foci of paragonimiasis in the districts of Shaohing and Chüchi six new centres are recorded in the Chekiang Province, viz., Fenghwa, Yuyao, Wuhing, Kienteh, Kinhwa and Kaihwa. A spot map gives the location of human infections, of animal infections, of metacercariae in crabs and of negative findings in Chekiang. R.T.L.

(24l) Kan & Kung have analysed the clinical data of the Chü Hsien Anti-Schistosomiasis Unit operating in the endemic area of Chien Tan Fan, a plain of about 70 square kilometres south of the city of Chü Hsien. Of 1,234 persons clinically examined 309 showed symptoms of schistosomiasis. Of 592 persons whose faeces were microscopically examined 290 were positive for schistosome eggs. The male cases outnumbered the female by 37 to 1. R.T.L.

(24m) This useful compendium of the helminth parasites recorded from man and animals in China is arranged in two sections. The first presents the data under the various classes of parasites, the second classifies the parasites under the various Phyla of hosts in which they have been found. Geographical distribution and bibliographical references are also given. R.T.L.

25—Comptes Rendus des Séances de l'Académie des Sciences.

- a. CARRÈRE, P., 1936.—“ Sur le cycle évolutif d'un *Maritrema* (Trématodes).” 202 (3), 244-246.

(25a) Carrère gives a brief description of *Maritrema rhodanicum* n. sp. and differentiates it from its nearest congeners: *M. gratiosum*, *M. subdolum* and *M. sachalinicum*. The first intermediary is *Paludestrina acuta* or *Pseud-ammonicola similis* and the second *Gammarus locusta* or *G. pulex*. The adult fluke was found experimentally in the intestine of *Larus argentatus* var. *michahellesii*, and small infections of undersized specimens were also set up in ducks.

B.G.P.

26—Comptes Rendus des Séances de la Société de Biologie.

- a. JOYEUX, C. & BAER, J. G., 1936.—“ Recherches biologiques sur la ligule intestinale; réinfestation parasitaire.” 121 (1), 67-68.
- b. LEMAIRE, G., 1936.—“ Effets physiologiques différents des albumines hydatiques et de la toxine isolée par ultrafiltration.” 121 (4), 349-350.
- c. LEMAIRE, G., 1936.—“ Sur l'origine des albumines dans les liquides hydatiques et sur la cause des échecs observés dans l'anaphylaxie hydatique expérimentale du cobaye.” 121 (4), 350-351.
- d. COUTELEN, F., 1936.—“ Certains oiseaux carnivores sont-ils susceptibles de servir d'hôtes définitifs à la forme adulte du Ténia échinocoque? (Contrôle expérimental).” 121 (5), 401-403.
- e. COUTELEN, F., 1936.—“ Les oiseaux domestiques peuvent-ils héberger spontanément des hydatides échinococciques et prendre place dans le cycle évolutif normal du Ténia échinocoque? (Contrôle expérimental).” 121 (6), 490-493.
- f. COUTELEN, F., 1936.—“ Migration active et élective des scolex échinococciques dans le foie de la souris blanche au cours de certaines échinococcoses secondaires expérimentales.” 121 (8), 730-732.
- g. COUTELEN, F., 1936.—“ Echinococcose secondaire expérimentale de la plèvre et du poumon de la souris blanche, par migration active trans-diaphragmatique de scolex échinococciques inoculés dans la cavité péritonéale.” 121 (13), 1266-1268.

(26a) Joyeux & Baer infected two ducks, seven times each and a herring gull three times, with plerocercoids of *Ligula intestinalis* (L.) obtained from tench. The latest infections proved as effective as the first. The plerocercoids metamorphosed in 2 to 3 days; ova appeared in the host's faeces and eventually the worms were expelled. For 14 days after the expulsion of the worm the host is immune to reinfection: thereafter new infections are effective. *Ligula* is naturally a facultative parasite of many aquatic birds and the authors obtained experimental development in the cat and dog but not in macaques. They also record an immature *Ligula* from the human subject. These experimental infections with plerocercoids all produced viable ova whence the proceroid was cultured and *Cyclops bicuspidatus* infected. Parenteral introduction of the plerocercoids into the peritoneal cavity of the rabbit produced positive results—even with decapitated worms: owing to the loss of their fixation apparatus, however, the latter cannot survive in the host's intestine and are expelled.

S.G.S.

(26b) Lemaire finds that hydatid fluid consists of albuminous and peptonic fractions which can be separated by ultrafiltration. When injected

intravenously into a dog, the resulting reactions are different. When the albuminous portion is injected a shock occurs which lasts 8 minutes : a second injection gives no reaction. In the case of injection of the ultrafiltrate, however, a severe shock follows the second injection, there being developed no tachyphylaxis. P.A.C.

(26c) Lemaire agrees with Weinberg & Ciuca that guinea pigs sensitized with hydatid liquid from sheep cysts develop an immunity to further shocks but have no immunity to serum of sheep infected with hydatid. P.A.C.

(26d) Coutelen has failed to produce experimentally in carrion birds the adults of *Taenia echinococcus*. He is of opinion that the body temperature of the birds used, which is 42°C., may afford protection against infection, for *Echinococcus scolices* are killed *in vitro* at 42° to 44°C. R.T.L.

(26e) Coutelen is unable to infect the chicken, pigeon or turkey with hydatid cyst experimentally. P.A.C.

(26f) Confirming Dévé's discovery that the intraperitoneal injection of hydatid sand into white mice is followed by a massive infection of hydatids, Coutelen finds that in certain mice the hydatids show a marked predilection for the liver, where they are not merely lying just under the capsule but embedded in the liver substance. Coutelen has been unable to confirm Bacigalupo's finding [see Helm. Abs., Vol. II, Nos. 243a, 243c] that scolices can enter the body cavity by actively penetrating through the intestinal wall. B.G.P.

27—Deutsche Medizinische Wochenschrift.

- a. WIGAND, R., 1936.—"Klinisch-parasitologische Beobachtungen II." 62 (5), 175-177.

(27a) Wigand's observations in East Prussia show that: (i) Inhabitants of Narmeln on the Frische Nehrung are free from *Dibothriocephalus* and *Opisthorchis*, whereas these worms infect persons on the Kurische Nehrung. This is due to the fact that the respective 2nd intermediaries are not eaten raw, though eels are so eaten. (ii) Dogs already infected with *Taenia serrata* will not support *Dibothriocephalus* in addition; the region of the dog's intestine occupied by *T. serrata* shows inflammation. (iii) The incidence of helminths in man in E. Prussia varies from year to year from 14% to 41%. (iv) *Strongyloides*, found in man in E. Prussia for the first time since 1899, yields to treatment with gentian violet. B.G.P.

28—Deutsche Tierärztliche Wochenschrift.

- a. SCHMID, F., 1936.—"Parasitenbekämpfung im Rahmen der Erzeugungsschlacht." 44 (6), 81-84.

(28a) Schmid stresses the economic importance of parasitism in farm stock and discusses some general principles of control, such as anthelmintic treatment, composting dung so as to attain a temperature of 60°C., cleaning pastures and watering-troughs, rotational grazing, stable hygiene, etc. He calls for wider propaganda among farmers, and concludes by indicating some of the problems awaiting solution. B.G.P.

29—Farming in South Africa.

- a. MÖNNIG, H. O., 1936.—“The ascaris worm of pigs.” 11 (118), 37.

(29a) In this popular article on *Ascaris lumbricoides* Mönnig deals with the life-history, symptoms, post-mortem appearance, treatment and control of the parasite in pigs. D.O.M.

30—Gazette Hebdomadaire des Sciences Médicales de Bordeaux.

- a. DAMADE, M., 1936.—“Kyste hydatique du foie et tubage duodénal.” 57 (4), 59-60.
b. LANDE, P. & SIGALAS, R., 1936.—“Ascaridiose et médecine légale.” 57 (6), 82-84.

(30b) The medicolegal aspect of ascaris infection is emphasized by Lande & Sigalas who give an account of a fatal case of convulsions in which poisoning was suspected as the cause of death but in which there was peritonitis associated with the presence of numerous *Ascaris lumbricoides* in the small intestine. R.T.L.

31—Indian Journal of Medical Research.

- a. MAPLESTONE, P. A. & MUKERJI, P. K., 1936.—“An improved technique for the isolation of ascaris eggs from soil.” 23 (3), 667-672.

(31a) Maplestone & Mukerji can recover *Ascaris* eggs from soil by treating it with a 2.13% solution of NaOH with frequent stirring for 2 hours, followed by bubbling chlorine gas through the solution for 10 minutes. After standing, the supernatant fluid is pipetted off and the soil centrifuged in saturated brine. The proportion of eggs recovered decreased the longer the soil stood before extraction, particularly if it was allowed to dry. P.A.C.

32—Indian Medical Gazette.

- a. MAPLESTONE, P. A. & RIDDLE, J. S., 1936.—“Infection with *Bertiella studeri*.” 71 (2), 81.

33—Japanese Journal of Experimental Medicine.

- a. WATARAI, J., 1936.—“Studies on the skin reaction caused by *Schistosoma japonicum*, cutaneously applied on the animals.” 14 (1), 1-18.
b. GOTO, S. & ISHII, N., 1936.—“On a new cestode species, *Amphilina japonica*.” 14 (1), 81-83.

(33a) An itching dermatitis locally named “Kabure” has been known from ancient times in the endemic districts of *Schistosoma japonicum*. Watarai shows experimentally that the invasion of the skin by cercariae of *S. japonicum* generally does not cause itching in the normal host while a few cercariae or even one, can cause marked dermatitis when they penetrate the skin of an abnormal host (e.g., the domestic fowl). He concludes that “Kabure” may be caused by the cutaneous invasion of some heterogeneous trematode, cestode or nematode larvae. R.T.L.

(33b) Goto & Ishii describe a monozoan cestode from the peritoneal cavity of *Acipenser mikadoi*. This is named *Amphilina japonica* and differentiated from *A. foliacea*. It has a receptaculum seminis. The testes lie chiefly outside the uterine convolutions. The vitelline follicles reach to the middle of the vaginal duct. The uterine and vaginal apertures also differ in position from those of *A. foliacea*.

R.T.L.

34—Japanese Journal of Zoology.

- a. YAMAGUTI, S., 1936.—“Studies on the helminth fauna of Japan. Part 14. Amphibian trematodes.” 6 (4), 551-576.

(34a) Of the 14 species of trematodes described by Yamaguti from Japanese Amphibia four are new and two are new subspecies. The new species are: *Polystoma rhacophori*, *Halipegus japonicus*, *Gorgodera japonica* and *Pleurogenes japonicus*.

R.T.L.

35—Journal of Agricultural Research.

- a. CHRISTIE, J. R., 1936.—“Life history of *Agamerms decaudata*, a nematode parasite of grasshoppers and other insects.” 52 (3), 161-198.

(35a) Christie, from studies made at Falls Church, Va., elucidates the life-history of *Agamerms decaudata*, a Mermithid parasite of grasshoppers and other insects and discusses the morphological development of the parasite in considerable detail.

Adults, coiled within small cavities in the soil, occur 5 to 15 cm. below the surface. Here they deposit eggs from August onwards and by October each female, which, it is estimated, will lay about 10,000 eggs, is surrounded by developing ova. Hatching occurs between late June and mid-July of the following year when the preparasitic larvae migrate to the soil surface and climb grass or other vegetation to reach their hosts. As drying is fatal to them, this climbing must be done during wet weather or on dewy evenings or mornings. They enter the body cavity of recently hatched grasshopper nymphs by penetrating the body wall, usually breaking at a pre-formed node and leaving the long, thin, posterior portion of their body outside the host. Within the host the parasitic larvae remain from 1 to 3 months, complete their growth and then emerge by forcing their way through the body wall to enter the soil. The post-parasitic larvae moult during the following summer and the resulting adult females commence egg-laying. The effect of the parasite on the host is to retard development and usually to render female grasshoppers sterile, the ovaries becoming reduced in size and, in many cases, vestigial. The male gonads generally are much less affected. One parasite per host appears to be the usual number in nature. The Mermithids generally kill their host at the time they emerge.

J.N.O.

36—Journal of the American Medical Association.

- a. SAYAD, W. Y., JOHNSON, V. M. & FAUST, E. C., 1936.—“Human parasitization with *Gordius robustus*.” 106 (6), 461-462.

(36a) Sayad, Johnson & Faust report what they believe to be the first authentic human case on record in the literature of parasitism by an immature

Gordius, possibly *G. robustus*. The parasite had produced a local tissue reaction and was removed within a pseudo-encapsulated mass, about the size of a small bean, from the vicinity of the left eye of a white patient of southern Florida, aged 37, who was a keen fresh-water fisherman. The clinical symptoms are given and the gross and microscopic pathology of the tumour-like mass described. J.N.O.

37—Journal of the American Veterinary Medical Association.

- a. PATTERSON, E. E., 1936.—“Another specimen of *Diocotphyne renale*.” 88 (2), 184.
- b. CAMERON, T. W. M., 1936.—“Parasites of importance in meat inspection in North America.” 88 (3), 282-288.
- c. GILTNER, W., 1936.—“Report of committee on parasitic diseases.” 88 (3), 421-431.

(37b) In this review Cameron includes observations on the incidence, life-history, pathogenicity, differential diagnosis and control of the parasites of importance in meat inspection in North America. D.O.M.

(37c) The replies obtained to a questionnaire addressed to the Directors of Agricultural Experiment Stations in the U.S.A. are tabulated in this report of a committee on parasitic diseases. The report shows, among other items, what parasites are prevalent in each State, the opinions expressed on the importance of parasitic diseases as compared with infectious diseases and the suggestions made for their more effective control. Observations on parasites in wildlife are also included. D.O.M.

38—Journal of Biochemistry.

- a. SMORODINZEW, I. A. & BEBESCHIN, K. W., 1936.—“Beiträge zur Chemie der Helminthen. Mitteilung III. Die Chemische Zusammensetzung des *Taenia solium*.” 23 (1), 19-20.
- b. SMORODINZEW, I. A. & BEBESCHIN, K. W., 1936.—“Beiträge zur Chemie der Helminthen. Mitteilung IV. Die Chemische Zusammensetzung des *Diphyllobothrium Latum*.” 23 (1), 21-22.
- c. SMORODINZEW, I. A. & BEBESCHIN, K. W., 1936.—“Beiträge zur Chemie der Helminthen. Mitteilung V. Die Chemische Zusammensetzung der *Ascaris lumbricoides*.” 23 (1), 23-25.

(38a) Smorodinzew & Bebeschin found by chemical analysis that *Taenia solium* contained less organic matter and ash than *Taenia saginata*, but about the same amounts of lipoids and total nitrogen. Individual variations in the composition of *T. solium* were greater than those of *T. saginata*. R.H.H.

(38b) Chemical analyses of *Diphyllobothrium latum* showed a higher content of lipoids, total nitrogen and organic matter, but a lower ash content, than in the case of *Taenia solium*. Individual variations were much greater than those of *Taenia solium*. R.H.H.

(38c) Chemical analyses of *Ascaris lumbricoides* showed no significant differences between males and females. The content of organic matter, total nitrogen and ash was much higher than that of flat worms, but the lipid content was lower. R.H.H.

39—Journal of the Council for Scientific and Industrial Research.

- a. ROSS, I. C., 1936.—“A note on the development of *Echinococcus granulosus*.” 9 (1), 67-68.

(39a) In his experiment on dogs Ross found that eggs of *Echinococcus granulosus* were not passed until the 47th day after infection. It was also found that Nemural is less effective than arecoline hydrobromide as an anthelmintic against this parasite and that a considerable proportion of scolices remained after treatment.

D.O.M.

40—Journal of the Egyptian Medical Association.

- a. SAMY, M., 1936.—“Bilharzial piles and anal fissure.” 19 (2), 65-71.

41—Journal of the Marine Biological Association of the United Kingdom.

- a. ROTHSCHILD, M., 1936.—“Gigantism and variation in *Peringia ulvae* Pennant 1777, caused by infection with larval trematodes.” 20 (3), 537-546.

(41a) From a study at Plymouth of the incidence of various types of trematode cercariae in *Peringia ulvae* of various sizes, Rothschild is led to the view that the largest molluscs owe their size to the pathological effects of the infestation. Apart from large size, irregular ballooning of certain whorls and asymmetry of the spire are also apt to occur. The cercariae most commonly found, especially in the largest molluscs, belonged to the Ubiquita and Oocysta groups in which the cercariae are produced in sporocysts which lie in the gonads of the host.

B.G.P.

42—Journal of Oriental Medicine.

- a. RYO, SAI, 1936.—“Preliminary report on the new anthelmintic “Raigan” (Chinese drug) in taeniasis.” 24 (1) [English summary p. 14.]

(42a) With the Chinese drug “Raigan” Ryo successfully treated two cases of *Taenia solium*.

R.T.L.

43—Journal of Parasitology.

- a. TURNER, E. L., BERBERIAN, D. A. & DENNIS, E. W., 1936.—“The production of artificial immunity in dogs against *Echinococcus granulosus*.” 22 (1), 14-28.
- b. LYNCH, J. E., 1936.—“*Phyllodistomum singulare* n. sp. a trematode from the urinary bladder of *Dicamptodon ensatus* (Eschscholtz), with notes on related species.” 22 (1), 42-47.
- c. MCCOY, O. R., 1936.—“The development of Trichinae in abnormal environments.” 22 (1), 54-59.
- d. WILLEY, C. H., 1936.—“The morphology of the amphistome cercaria, *C. poconensis* Willey, 1930, from the snail, *Helisoma antrosa*.” 22 (1), 68-75.
- e. HUNNINEN, A. V., 1936.—“An experimental study of internal auto-infection with *Hymenolepis fraterna* in white mice.” 22 (1), 84-87.
- f. DAVIS, D. J., 1936.—“Report on the preparation of an histolytic ferment present in the bodies of cercariae.” 22 (1), 108-110.
- g. HUFF, C. G. & BUCY, P. C., 1936.—“An abnormal *Cysticercus cellulosae* from a human brain.” 22 (1), 110.

(43a) This paper deals with attempts to immunize the dog against the intestinal stages of *Echinococcus granulosus*. Only a partial protective reaction against infection followed the use of antigen prepared from hydatid material. Some of the dogs examined appeared to possess a defence mechanism against infection the nature of which has not yet been elucidated.

R.T.L.

(43c) By injecting trichina larvae, freed by artificial digestion, into living chick embryos McCoy has obtained a small number of adult worms. Although the rate of growth was somewhat retarded the adults were noticeably small. When injected into the uteri of non-pregnant rats the larvae were rapidly killed but when pregnant rats were used a number of the trichinae developed normally to maturity and in a few cases larval invasion of the muscles of the mother rat occurred. A small series of female rats which showed intestinal immunity to a second infection failed to manifest any significant immunity in the uterus.

R.T.L.

(43e) By placing mice in an ingeniously devised "stock" to prevent infection from outside sources, Hunninen has shown that internal autoinfection with *Hymenolepis fraterna* does not occur in normal mice but may occur in mice whose resistance has been lowered by some factor, e.g., bacterial infection.

R.T.L.

(43f) Centrifuged cercariae of *Diplostomum flexicaudum* were ground with distilled water in a mortar until completely macerated. The material was kept overnight in a refrigerator and filtered next morning. The filtrate was whitish, homogeneous and slightly viscid. When small pieces of tadpole tissue are placed in this extract and kept for three hours in an ice box the hystolytic activity of the extract is at once apparent in the changes in the tissue.

R.T.L.

(43g) Of four *Cysticercus cellulosae* removed from the brain at a necropsy, one was normal, two were without scolex while a third had only eight hooks on the rostellum although the suckers were normal.

R.T.L.

44—Journal of the Philippine Islands Medical Association.

- a. AFRICA, C. M., LEON, W. DE & GARCIA, E. Y., 1936.—"Heterophyidiasis: III. Ova associated with a fatal hemorrhage in the right basal ganglia of the brain." 16 (1), 22-26.

(44a) A first case is now reported of the presence of heterophyid eggs in what appear to be old sites of capillary haemorrhages near a clot in the right basal ganglia of the brain of a Filipino who had died of cerebral haemorrhage. Specimens of *Monorchotrema taihokui* and of *Heterophyes brevicaca* were found in the intestines. The lesions were identical with those found in the myocardium in cardiac heterophyidiasis reported by the authors in 1935.

R.T.L.

45—Journal of the Royal Army Medical Corps.

- a. MORRISON, W. K., 1936.—"Pig and pork: Cysticercosis (*Taenia solium*)."

66 (1), 32-35.

46—Journal of the Royal Naval Medical Service.

- a. EGAN, C. H., 1936.—“An outbreak of Schistosomiasis japonicum.” 22 (1), 6-18.

(46a) Egan gives the clinical records of 12 cases of schistosomiasis which occurred on H.M.S. Sandpiper at Chinkiang on the Yangtse River in 1934. He advises “against a diagnosis on a pyrexial case, particularly in one with abdominal symptoms, unless both blood and stools have been thoroughly examined.”

R.T.L.

47—Journal of Tropical Medicine and Hygiene.

- a. LAMBERT, S. M., 1936.—“A resurvey of hookworm disease in Fiji in 1935, ten years after mass treatment.” 39 (2), 19-21.
b. CAWSTON, F. G., 1936.—“Recent research in the treatment of bilharzia disease.” 39 (3), 28-29.

(47a) Mass hookworm treatment was applied in 1922 to 95% of the inhabitants of all areas in Fiji showing an incidence of 60% or more. In some of these areas the incidence was 90%. Of 1,243 infected persons, 89% were negative one month after treatment. There was also a less comprehensive mass treatment from 1924 to 1926. Lambert has now (1935) examined 2,066 persons from the former bad areas and finds 51% positive. But the infection now is much lighter in intensity and few clinical cases occur, largely owing to such sanitary measures as the wide use of the bored-hole latrine. Data are grouped under age, adults (16+) and children (3-16), and under race, Indian and Fijian.

B.G.P.

(47b) Clinical notes are given of a few cases of schistosomiasis treated with Trystibine and Stibilase. These oxyquinoline derivatives are stated to produce far less irritation subcutaneously and give promise of effecting early cures.

R.T.L.

48—Journal of the Washington Academy of Sciences.

- a. CHITWOOD, B. G. & CHITWOOD, M. B., 1936.—“The histology of nematode esophagi. V. The esophagi of *Rhabditis*, *Anguillulina* and *Aphelenchus*.” 26 (2), 52-59.

(48a) Chitwood & Chitwood continuing their study of the structure and histology of the oesophagus in nematodes, present the results of investigations on the oesophagi of *Rhabditis*, *Anguillulina* and *Aphelenchus*. The oesophagus of *Rhabditis terricola* is described in detail, the number, distribution and structure of the nuclei in the following regions being given: precorpus, postcorpus, isthmus, preavalvular region, postavalvular region and oesophago-intestinal valve. The oesophageal glands and their openings into the lumen of the oesophagus are also described. The corresponding structures in the oesophagus of *Anguillulina dipsaci* and *Aphelenchus avenae* are more briefly dealt with.

T.G.

49—Kitasato Archives of Experimental Medicine.

- a. IDE, K., 1936.—“On a new second intermediate host of *Clonorchis sinensis*, Wakasagi (*Hypomedus* [*Hypomesus*] *olidus* (Pallas)).” 13 (1), 40-44.
- b. IDE, K., 1936.—“Significance of *Hemibarbus barbus* (Temminck & Schlegel) as the second intermediate host of *Clonorchis sinensis*.” 13 (1), 45-47.

(49a) The 41 species of fish hitherto reported as second intermediate hosts for *Clonorchis sinensis* are all members of the family Cyprinidae. Ide finds that in the district bordering Lake Kasumigaura the inhabitants eat a species of Salmonidae named *Hypomesus olidus*, Pallas, locally called “Wakasagi,” which harbours the cercariae of *C. sinensis*. This fish is often consumed fresh with vinegar sauce. R.T.L.

(49b) Ide finds that the carp *Hemibarbus barbus* in Lake Kasumigaura harbours cercariae of *Clonorchis sinensis* to the extent of 9.8 cercariae per fish on an average. This fish is eaten raw by the local inhabitants. Adult worms were reared experimentally in two rabbits. R.T.L.

50—Klinische Wochenschrift.

- a. HOFF, F. & SAUERSTEIN, H., 1936.—“Über Bothriocephalus-Anämie.” 15 (4), 131-135.

(50a) Contrary to Vogel's suggestion that inhabitants of the Kurische Haff [E. Prussia] are less liable to *Dibothriocephalus* anaemia through eating raw fish liver, Hoff & Sauerstein find them just as liable as others. The disease tends to run in families and to appear repeatedly in the same person, suggesting that the tapeworm is an extrinsic factor working in combination with an innate predisposition. The hypochromic anaemia found in some carriers is pathologically related to the pernicious type and often succeeds it during recovery. B.G.P.

51—Lancet.

- a. WALTERS, A. H., 1936.—“Treatment of ankylostomiasis in Indian seamen.” 230 (5872), 599-600.

52—Lingnan Science Journal.

- a. CHEN, H. T., 1936.—“Parasites in slaughter houses in Canton. Part 1. Helminths of Kwangtung hogs.” 15 (1), 31-44.
- b. ROBERTSON, R. C., 1936.—“The breeding conditions of *Oncomelania hupensis* (Rissoidea: Triculinae).” 15 (1), 55-56.
- c. WALLACE, F. G., 1936.—“A new intermediate host of *Fasciolopsis buski* (Lankester) (Trematoda: Fasciolidae).” 15 (1), 125-126.

(52a) From 100 hogs slaughtered in Canton between 1931 and 1934 Chen collected one species of Acanthocephala, viz., *Macracanthorhynchus hirudinaceus*, thirteen species of nematodes, viz., *Ascaris lumbricoides*, *Globocephalus connorfilii* and *G. samoensis*, *Oesophagostomum dentatum* and *O. longicaudum*, *Bourgelatia diducta*, *Ancylostoma caninum*, *Physocephalus* sp., *Arduenna strongylina* and *A. sp.*, *Gnathostoma hispidum*, *Trichuris suis* and *Strongyloides papillosus*, three species of trematodes, viz., *Clonorchis sinensis*, *Fasciolopsis buski* and *Fasciola hepatica*, and the larva of one cestode species,

viz., *Cysticercus tenuicollis*. Over 1,000 hogs were examined for *Trichinella spiralis* but gave negative results. The infection with *A. caninum* occurred in one hog only, in which a single specimen was obtained from the stomach.

R.T.L.

(52b) In laboratory attempts to infect *Oncomelania hupensis* with *Schistosoma japonicum*, development of the miracidia is arrested in adult molluscs and only reaches the cercarial stage in young specimens. The breeding season near Shanghai is from April to the middle of May. In the latter weeks of June and the first half of July the infective index of the snails only reached 15 per 1,000 and in August and September fell to less than 2 per 1,000. Evidence was obtained that schistosomiasis is not likely to be contracted from the end of September until the end of the spring breeding season.

R.T.L.

(52c) In the inhabitants of the village of Boon Tong on the north-west side of Canton there is a high incidence of *Fasciolopsis buski*. The most common planorbid in the locality is *Segmentina calathus*. Of these 0.66% harbour the cercariae of *F. buski*. These cercariae readily encyst on the leaves of *Vallisneria* in the laboratory. The cysts were found on *Trapa natans* grown in the village.

R.T.L.

53—Marseille Medical.

- a. ROBIN, C., SICÉ, A. & MERCIER, H., 1936.—“Parasitisme associé : ankylostomose et onchocercose.” 73 (4), 140-144.

(53a) A case of onchocerciasis is reported from man from the Ivory Coast.

R.T.L.

54—Medical Journal of Australia.

- a. PENFOLD, W. J., PENFOLD, H. B. & PHILLIPS, M., 1936.—“A survey of the incidence of *Taenia saginata* infestation in the population of the State of Victoria from January, 1934, to July, 1935.” 23rd Year, 1 (9), 283-285.
- b. PENFOLD, W. J. & PENFOLD, H. B., 1936.—“The diagnosis of *Taenia saginata* infestation.” 23rd Year, 1 (10), 317-321.
- c. PENFOLD, H. B., 1936.—“The treatment of patients infested with *Taenia saginata*, with special reference to certain unusual results.” 23rd Year, 1 (12), 385-398.

(54a) In Victoria 42 of the 90 cases of *Taenia saginata* collected by Penfold, Penfold & Phillips in 1934-35 occurred in Syrian born patients and had been acquired before arrival in Australia, while 48 Australian born patients had acquired their infection in Victoria.

R.T.L.

(54b) In the State of Victoria, Australia, *Taenia saginata* is the only endemic tapeworm in man. W. J. Penfold & H. B. Penfold obtained 186 specimens from 86 patients. In their opinion the only certain method of making an immediate diagnosis is to administer an anthelmintic followed by a purge. By this means at least part of the tapeworm will be expelled. Eosinophilia occurred in 2 out of 20 cases in which the blood was examined.

R.T.L.

(54c) Penfold describes in full detail the successful use of heavy doses of liquid extract of male fern, in capsules, in 86 cases of *Taenia saginata* infection. A total dose of 10.7 c.c. for persons of 66 kg. and over is completely effective in 90% of cases if the details of preparation, treatment, and purgation are rigidly followed. In one case harbouring 27 tapeworms, 26 were obtained after the first treatment. B.G.P.

55—Medicina de los Países Cálidos.

- a. SANZ ASTOLFI, J., 1936.—“La filariosis en el Norte de Marruecos.” 9 (1), 16-25.
- b. MARTIN, L. D., 1936.—“Consideraciones sobre varios casos de triquinosis.” 9 (2), 75-86.

(55b) Martin presents brief clinical notes and leucocyte counts for 21 cases of trichinellosis in Spain. Neosalvarsan appeared to alleviate symptoms to some extent. B.G.P.

56—Memorias do Instituto Oswaldo Cruz.

- a. CRUZ, W. O., 1936.—“Sobre a significação da eosinophilia na ancylostomose.” 31 (1), 1-10. [English summary pp. 8-9.]
- b. FREITAS, J. F. TEIXEIRA DE & LENT, H., 1936.—“Estudo sobre o genero *Globocephalus* Molin, 1861 (Nematoda: Strongyloidea).” 31 (1), 69-79.
- c. FREITAS, J. F. TEIXEIRA DE & LENT, H., 1936.—“Estudo sobre os Capillariinae parasitos de mamíferos (Nematoda: Trichuroidea).” 31 (1), 85-160.

(56a) Discussing the significance of eosinophilia in ankylostomiasis Cruz suggests that it is produced in response to foreign proteins secreted in the intestinal lumen by the adult worms. That it is not causally related to the hookworm anaemia syndrome is shown by the facts (i) that it persists after the anaemia has been cured and (ii) that it is not a marked feature of severe anaemia cases. B.G.P.

(56b) Freitas & Lent describe and figure *Globocephalus marsupialis* n. sp. from *Metachirops opossum* in Brazil, and give a revision of the genus. To the five previously accepted species they add *G. macropodis* (Y. & M., 1926) by suppressing the genus *Globocephaloides*. B.G.P.

(56c) Freitas & Lent have monographed the 57 species of *Capillaria* recorded from mammals, regarding 33 of them as well established and the rest as doubtful on account of poor descriptions or figures. Following the systematic treatment of species are a classified list of hosts, a 21-page bibliography, and 130 figures in 16 plates. B.G.P.

57—Münchener Tierärztliche Wochenschrift.

- a. POPESCU, F. & MIRONESCU, D., 1936.—“Die Behandlung der Taeniasis der Hunde mit Nemural.” 87 (13), 148-150.

(57a) Popescu & Mironescu summarize the known incidence of *Taenia echinococcus* in dogs in European countries, and report on tests made with “Nemural” on tapeworm infested dogs. One tablet to every 5 kg.

of body-weight was required for effective action. Treatment was given after the dogs had been on a milk diet for 12 to 14 hours. The tablets were dissolved in slightly warmed water and syrup. 75% of all the worm-infested dogs treated passed tapeworms at once or in two or three stools. The drug has no action on ascarids.

R.T.L.

58—New Zealand Journal of Agriculture.

- a. HOPKIRK, C. S. M., 1936.—“Parasitic gastro-enteritis of lambs and hoggets. Warning to farmers.” 52 (2), 111.

59—North American Veterinarian.

- a. ALICATA, J. E., 1936.—“Microfilarial infestation in the skin of a horse.” 17 (1), 39-41.
b. ANON, 1936.—“The microscopic diagnosis and treatment of heartworm disease in dogs. (A brief summary)” 17 (2), 37-39.
c. WRIGHT, W. H. & UNDERWOOD, P. C., 1936.—“A survey of 1,000 dog heartworm cases treated with Fouadin.” 17 (2), 39-43.
d. HALL, M. C., 1936.—“The eradication of parasites vs. the adjustment to parasitism.” 17 (3), 17-19.

(59a) Alicata describes, with the aid of two photographs and one drawing, a skin lesion from the abdomen of a horse in Virginia and the microfilariae that were found in large numbers in the dermis of this lesion. No adults were found. He points out that these larvae may be identical with those reported by Underwood (1934) from the skin of horses infected with “equine dhobie itch” and that they both show similarity to the microfilaria of *Onchocerca cervicalis*. A postscript states that the author has since found identical lesions on the skin of the neck, abdomen, fore and hind limbs of a horse infested with adult *O. cervicalis* of the ligamentum nuchae.

J.W.G.L.

(59c) Answers to a questionnaire issued by Wright & Underwood to practising veterinarians using the drug Fouadin show that out of 997 definite cases of *Dirofilaria immitis* in the dog 832 remained negative to microfilariae in the peripheral circulation after one course of treatment and 143 after a second course, 22 dogs remaining infected. There was a mortality of 4.9% in treated cases and 90.3% of the dogs treated were reported to be restored to usefulness. Twenty-nine out of 32 veterinarians considered the use of Fouadin as practical and justified the expense to the owner.

J.W.G.L.

(59d) Hall points out that two schools of thought have recently arisen concerning the problem of animal parasitism; one believes that in general parasites are injurious and should be eradicated by treatment and prophylaxis, the other believes that in general parasites are not injurious and therefore should not and cannot be eradicated and that their control is a matter of adjustment to parasitism. In Hall's opinion the acceptance of adjustment to parasitism is a defeatist policy. He considers that all parasites are potentially harmful and that treatment and prophylaxis, having eradication as their ultimate objective, is the only wise policy.

R.T.L.

60—Parasitology.

- a. CHEN, H. T., 1936.—“A study of the Haplorchinae (Looss 1899) Poche 1926 (Trematoda: Heterophyidae).” 28 (1), 40-55.
- b. ROTHSCILD, M., 1936.—“The process of encystment of a cercaria parasitic in *Lymnaea tenera euphratica*.” 28 (1), 56-62.
- c. WOOLCOCK, V., 1936.—“Monogenetic trematodes from some Australian fishes.” 28 (1), 79-91.
- d. THEILER, H. & FARBER, S. M., 1936.—“*Trichomonas muris*, parasitic in the Oxyurid nematodes, *Aspicularis tetraptera* and *Syphacia obvelata*, from white mice.” 28 (2), 149-160.
- e. LUCKER, J. T., 1936.—“Preparasitic moults in *Nippostrongylus muris*, with remarks on the structure of the cuticula of Trichostrongyles.” 28 (2), 161-171.
- f. IYENGAR, M. O. T., 1936.—“Entry of *Filaria* larvae into the body cavity of the mosquito.” 28 (2), 190-194.
- g. ALVEY, C. H., 1936.—“The morphology and development of the monogenetic trematode *Sphyrnura oligorchis* (Alvey 1933) and the description of *Sphyrnura polyorchis* n. sp.” 28 (2), 229-253.
- h. LYSAGHT, A. M., 1936.—“A note on the adult female of *Anguillulina aptini* (Sharga), a nematode parasitising *Aptinothrips rufus* Gmelin.” 28 (2), 290-292.

(60a) Chen finds the armature of the genital sucker to be the most reliable character in diagnosis of the Haplorchinae. The genus *Monorchotrema* falls as a synonym of *Haplorchis*. The latter genus contains only four valid species: *Haplorchis pumilio*, *H. taichui*, *H. yokogawai* and *H. milvi*, of which the last two may be synonymous. E.M.S.

(60b) Rothschild has reconstructed from sections of the host snail the form and life-history of the redia and cercaria stages of an apparently new Gymnocephalic trematode. The cercariae were found encysting within the rediae and in the tissue of the snail. The cyst wall is formed by the emptying of the giant ventral cells through the cuticle, to form a layer around the cercaria limited by the persistent “primitive epithelium.” E.M.S.

(60c) Woolcock describes four new species: *Megalocotyle helicoleni*, *Calicotyle inermis*, *Microcotyle sillaginae*, *M. victoriae*, with notes on *M. bassensis* Murray. *Calicotyle inermis* is interesting for its habitat in pouch-like dilatations of the oviduct of the female fish. E.M.S.

(60e) Lucker finds that the development of *Nippostrongylus muris* is typical, the worm undergoing four moults. The cuticle of *N. muris* and of various other strongyles consists of four distinct layers and the cuticular inflation behind the head is produced by the separation of the second and third layers. P.A.C.

(60f) Iyengar's observations show that the microfilariae of *Filaria bancrofti* and *F. malayi* penetrate the gut wall of *Culex fatigans* and *Mansonia annulifera* near or in the proventriculus and escape into the perivisceral cavity of the thorax. The sheath, which has previously been softened and partially disintegrated by the salivary secretion, is left behind in the cardiac mid-gut. In many instances the microfilariae were seen in the perivisceral cavity and in between the muscle bundles within one hour and in some cases within 20 minutes of feeding. Penetration occurs almost wholly within 2 hours. The concentration of microfilariae in the mosquito's stomach

contents is generally less than that in the human blood because many of these enter the haemocoel without reaching the stomach.

R.T.L.

(60g) Of the development of monogenetic trematodes only four complete life histories are known and very little has been written on their phylogeny. Alvey gives an account of the development of *Sphyranura oligorchis* and shows that in this and other Monogenea embryonic stages similar to *Dactylogyrus* are present. He has formed the opinion that all the parasitic platyhelminths have a common planula ancestor and that *Dactylogyrus* is near the primitive ancestral type of the Monogenea. A detailed account is given of the morphology of *S. oligorchis*, and *S. polyorchis* n. sp. is more briefly described.

R.T.L.

(60h) Supplementing Sharga's work on *Anguillulina aptini*, a parasite of *Aptinotrips rufus* [see Helm. Abs., Vol. I, No. 15of], Miss Lysaght observes that the parasitic female nematode differs in some respects from that described by Sharga, especially with regard to the ovary which, in specimens not subjected to crushing, shows an additional coil. The author thinks that fertilization occurs during the free-living stage and that the nematode gains entry into the insect by penetrating the body wall of the thrips by means of the buccal stylet. Both larval and pupal thrips were found infested. The behaviour of the female worm after entry into the insect is described.

J.N.O.

61—Phytopathology.

- a. CHRISTIE, J. R., 1936.—“The development of root-knot nematode galls.” 26 (1), 1-22.
- b. WILDE, S. A., 1936.—“Soil nematodes in forest nurseries.” 26 (2), 198-199.

(61a) Christie describes the development of galls caused by *Heterodera marioni* from 24 hours to 40 days after the penetration of the nematode. Mechanical injury was found to be slight, larvae passing between rather than through the cells. The final position of the larva was usually with the head in the plerome in the region of elongation. The first cell-reactions in the root were hypertrophy in the cortex pericycle and endodermis, stimulation of cell division in the pericycle and frequently suppression of division in the apical meristem. Cells in the central cylinder near the head of the nematode remained undifferentiated for 48 to 60 hours, they then became enlarged with swollen nuclei, the cell walls disintegrated and contents coalesced to form a giant cell. The giant cell increased in size by similarly coalescing with adjacent cells, their nuclei coalescing and finally breaking down. A layer of small-cell parenchyma resulting from pericyclic division gave rise to lateral roots. It is thought that these changes result from chemical stimulation produced by a secretion expelled from the mouth of the nematode.

M.J.T.

(61b) Wilde records the occurrence of nematodes, believed to be *Rhabditis*, in coniferous seedlings which were damping off in a Wisconsin forest nursery. They were found in the tissues of seedlings soon after germination but no experimental inoculations of seedlings with eelworms

were made. Mention is made of the resistance shown by the nematode larvae to fungicides. It is suggested that such nematodes may directly or indirectly play a part in the destruction of coniferous seedlings during early growth. T.G.

62—Plant Disease Reporter.

- a. MECKSTROTH, G. A., 1936.—“Observations on strawberry dwarf in North Carolina.” 20 (1), 19-22.
- b. PLAKIDAS, A. G., 1936.—“Nematodes on alligator weed.” 20 (1), 22.
- c. CORDER, M. N., BUHRER, E. M. & THRONE, G., 1936.—“A list of plants attacked by the sugar beet nematode (*Heterodera schachtii*).” 20 (3), 38-47.
- d. STEINER, G. & BUHRER, E. M., 1936.—“Observations of interest on nematode diseases of plants.” 20 (5), 90-91.

(62a) Meckstroth, reporting on the incidence of dwarf disease or crimp of strawberry, caused by *Aphelenchoides fragariae*, in North Carolina, shows that the disease has occurred on plants imported from districts thought to be free from it. He attributes this to inspection of fields, in the exporting areas, being carried out at a time of the year when symptoms are not fully manifested and suggests that growers can protect themselves from the disease by getting in stocks from certain northerly districts in which crimp has never been reported. Young healthy plants should be grown, as far as possible, on high land which has not previously carried strawberries so as to eliminate the risk of the parasite being carried in surface water. Disease-free plantations can be built up from such stocks. T.G.

(62b) Plakidas reports the occurrence of the root-knot nematode, *Heterodera marioni*, on alligator weed, *Alternanthera phylloxeroides*, a new host, occurring in a strawberry field in Louisiana and points out the danger of this weed serving as a reservoir host for the parasite since it is very difficult to eradicate from fields if once it becomes established. T.G.

(62c) Corder, Buhrer & Thorne list 143 plant species attacked by *Heterodera schachtii*. The host plants are listed alphabetically under their accepted scientific names; synonyms and common names are also listed. Hosts known to be affected in the U.S.A. are marked by an asterisk. M.J.T.

(62d) Steiner & Buhrer record the root-knot nematode, *Heterodera marioni* from 13 new host plants, and the meadow nematode, *Anguillulina pratensis*, from the roots of several plants some of which, including 9 species of *Solidago*, are new host records. *Anguillulina dipsaci* has been noted on several varieties of *Tigridia pavonia* and *Cephalobus elongatus* from potato and *Iris ochroleuca*. T.G.

63—Policlinico (Sezione Pratica).

- a. SPADARO, S., 1936.—“Un caso rarissimo di cisti idatidea nella vescica. (Guarigione spontanea).” 43 (11), 498-499.

64—Proceedings of the Helminthological Society of Washington.

- a. CHITWOOD, B. G., 1936.—“Some marine nematodes from North Carolina.” 3 (1), 1-16.
- b. JELLISON, W. L., 1936.—“The occurrence of the cestode *Moniezia benedeni* (Anaplocephalidae) in the American moose.” 3 (1), 16.
- c. STEINER, G., 1936.—“Opuscula miscellanea nematologica, III.” 3 (1), 16-22.
- d. LUCKER, J. T., 1936.—“Comparative morphology and development of infective larvae of some horse strongyles.” 3 (1), 22-25.
- e. JONES, M. F., 1936.—“*Metroliasthes lucida*, a cestode of galliform birds, in arthropod and avian hosts.” 3 (1), 26-30.
- f. PRICE, E. W., 1936.—“A new heterophyid trematode of the genus *Asco-coryle* (Centrocestinae).” 3 (1), 31-32.
- g. PRICE, E. W., 1936.—“Redescriptions of the type species of the trematode genera *Lechriorchis* Stafford and *Zeugorchis* Stafford (Plagiorchidae).” 3 (1), 32-34.
- h. MCINTOSH, A., 1936.—“A new trematode, *Laterotrema americana*, n. sp. (Stomylotrematidae), from song birds.” 3 (1), 34-35.
- i. MCINTOSH, A., 1936.—“A new trematode, *Gyrabascus echinus*, n. sp., from the yellow-breasted chat.” 3 (1), 35-36.

(64a) In an account of a large collection of marine nematodes taken at Beaufort, N.C., U.S.A., Chitwood describes the following new forms: Family DESMODORIDAE, *Acanthopharyngoides scleratum* n.g., n.sp., *Ceramonema reticulatum* n.sp., *C. sculpturatum* n.sp., *Pselionema rigidum* n.sp., *P. hexalatum* n. sp., *Dasynemella phalangida* n.sp., *Dasynemoides setosum* n.g., n.sp., Metachromadoracea new tribe, *Metachromadora onyxoides* n.sp., *M. obesa* n.sp., *Metonyx horridus* n.g., n.sp., Spirinacea new tribe, *Eubostrichus parasitiferus* n.sp., *Richtersia beauforti* n.sp., *Monoposthia hexalata* n.sp., *M. duodecimalata* n.sp.; Family AXONOLAIMIDAE, *Axonolaimus subsimilis* n.sp., *A. odontophoroides* n.sp., *Araeolaimus* (*Araeolaimus*) *cylindrolaimus* n.sp.; Family COMESOMIDAE, *Dorylaimopsis metatypicus* n.sp.; Family CAMACOLAIMIDAE, *Anguinoides stylosum* n.g., n.sp.; Family PLECTIDAE, *Leptolaimus maximus* n.sp.; Family MONHYSTERIDAE, *Cytolaimium obtusicaudatum* n.sp., *Halanonchus macramphidus* n.sp.; Family SIPHONOLAIMIDAE, *Siphonolaimus conicus* n.sp.; Family DESMOSCOLECIDAE, *Desmoscolex americanus* n.sp., *D. paraminutus* n.sp., *Tricoma spinosa* n.sp., *T. aurita* n.sp.

T.G.

(64c) Steiner shortly describes and figures (i) *Rhabditis spiculigera* n.sp. from strawberry roots attacked by the fungus *Cylindrocarpon*, (ii) *Neocephalobus leucocephalus* n.sp. from an agar culture inoculated with heartwood from scarlet oak and containing various bacteria and the fungus *Ceratomyxa* sp., on which the new nematode apparently feeds, (iii) *Rhabditolaimus* (*Rhabdiontolaimus*) *prodelphis* n.sp. and *Eucephalobus nannus* n.g., n.sp. from leaves of *Iris ochroleuca* suffering from frost injury.

T.G.

(64d) Following upon recent work on the morphology of infective larvae of certain horse strongyles, Lucker here adds comparable data for the larvae of *Gyalocephalus capitatus*, *Cylicocercus goldi* and *C. catinatus*, obtained by culturing eggs removed from the uteri of females.

B.G.P.

(64e) Jones redescribes the cysticercoids and adults of *Metroliasthes lucida*, from various specified grasshoppers and from turkeys and guinea-fowl,

respectively, and gives an account of the life-history as determined by her experimentally. Similar cysticeroids from beetles failed to develop in birds. The life-history occupies from 5 to 9 weeks. B.G.P.

(64f) Price describes *Ascocotyle mcintoshi* n.sp. from the small intestine of the white ibis, *Guara alba*, in Florida, distinguished by the great length of the caeca. He regards *Phagicola* as a distinct genus, and gives a key to the species of *Ascocotyle*. B.G.P.

(64g) Stafford's original descriptions of the two type species *Lechriorchis primus* and *Zeugorchis aequatus* were inadequate and unillustrated. Price here gives illustrated redescrptions of both. *Mediorima propria* should be transferred to *Lechriorchis*, *Caudorchis eurinus* to *Zeugorchis*, and *Zeugorchis natricis* to *Pseudoreniifer*. B.G.P.

(64h) *Laterotrema americana* n.sp., the second species of this genus, is described by McIntosh from two specimens, one found in *Vireo olivaceus* and one in *Geothlypis trichas*, in the bursa Fabricii. B.G.P.

(64i) *Gyrabascus echinus* n.sp. was found by McIntosh encysted in pairs in the wall of the small intestine of *Icteria virens*. B.G.P.

65—Proceedings of the Indian Academy of Sciences. Section B.

- a. LAL, M. B., 1936.—“A review of the genus *Paramonostomum*, Lühe ; with descriptions of two new species and remarks on the genera of the sub-family Notocotylinæ.” 3 (1), 25-34.
- b. MELLO, I. F. DE, 1936.—“An explanation to the occurrence of sporadic cases of urinary schistosomiasis in India.” 3 (2), 107-114.
- c. MIRZA, M. B., 1936.—“*Subulura hindi* n. sp. A new nematode parasite of *Sciurus palmarum*.” 3 (2), 125-127.

(65a) To the eight known species of *Paramonostomum* Lal adds *P. querquedula* n.sp. and *P. casarcum* n.sp. and gives keys for the identification of all the species of the genus and of the six genera of Notocotylinæ. A new genus *Neoparamonostomum* is created for those forms which have the genital pore behind the intestinal fork. R.T.L.

(65b) de Mello reports a case of autochthonous urinary bilharziasis from the village of Valpoy in Portuguese Goa where African troops were stationed from 1912 to 1934. He suggests that in India where the habitual intermediate hosts of *Schistosoma haematobium* are absent there may be other molluscs which show a definite miracidial attraction and may occasionally enable full larval development to occur. In Valpoy *Melancoides tuberculatus* and *Limnaea luteola* var. *punguis* are such potential eventual vectors. R.T.L.

(65c) Mirza describes *Subulura hindi* n.sp. from *Sciurus palmarum* in India. It can be differentiated from other species of the genus by the presence of eleven pairs of papillae in the male. The spicules are equal, 0.91 mm. long and 0.021 mm. broad. In the female the vulva is slightly in front of the middle of the body. P.A.C.

66—Proceedings of the Society for Experimental Biology and Medicine.

- a. HINMAN, E. H., 1936.—“Attempted reversal of filarial periodicity in *Dirofilaria immitis*.” 33 (4), 524-527.

(66a) By keeping two dogs infected with *Dirofilaria immitis* in a dark room, by using artificial light, and by altering the meal hours Hinman has attempted to reverse the filarial periodicity. A series of charts giving the microfilariae in the peripheral blood every six hours shows that the daily maximum moved forward about six hours and that alteration of daily routine does exert an influence on periodicity although the results cannot be taken as a true reversal of periodicity.

R.T.L.

67—Proceedings of the Zoological Society of London.

- a. MIDDLETON, A. D., 1936.—“Factors controlling the population of the partridge (*Perdix perdix*) in Great Britain.” 1935, Part 4, 795-815.

(67a) Middleton records that helminth parasitism, particularly gapes and strongylosis and on occasions *Davainea proglottina*, may cause death among partridges.

P.A.C.

68—Publications of the Carnegie Institution of Washington.

- a. MANTER, H. W., 1936.—“Some trematodes of Cenote fish from Yucatan.” No. 457, 33-38.

(68a) Manter erects a new genus, *Crassicutis*, to contain a new species, *C. cichlasomae*, from the stomach of *Cichlasoma mayorum* and assigns it to the Allocreadiidae, near *Anallocreadium*. He also describes *Derogenes tropicus* n. sp. from the stomach and gills of *Rhamdia guatemalensis*, and larval strigeids of the genus *Tetracotyle* from cysts on the skin and gills of *Cichlasoma mayorum*.

E.M.S.

69—Puerto Rico Journal of Public Health and Tropical Medicine.

- a. MOLINA, R. R. & PONS, J. A., 1936.—“Hematological studies on Schistosomiasis mansoni in Puerto Rico.” 11 (3), 369-400.

(69a) From a series of blood examinations on 20 cases of *Schistosoma mansoni* Molina and Pons have formed the opinion that therapeusis is at best less efficient and definite as compared with hookworm and they consider that prophylaxis and snail eradication afford better prospects of the effective control of the disease. The effects of Euadin, iron and ammonium citrate, liver extract and splenectomy on the anaemia were studied. The anaemia is apparently due to prolonged iron deficiency. Little can be done to ameliorate the damage done to the liver and this damage may result in a deficiency in the specific anti-anaemic factor apart from gastric dysfunction. In the late stages of the disease marked clinical improvement followed the removal of the spleen.

R.T.L.

70—Revue de Médecine et d'Hygiène Tropicales.

- a. MONTESTRUC, E. & BERTRAND, C., 1936.—“La bilharziose intestinale à la Martinique et son traitement par l'anthiomaline. (*Antimoniothiomalate de lithium*).” 28 (1), 31-37.
- b. MUKERJEE, S., 1936.—“L'arsaminol dans le traitement de la filariose.” 28 (1), 37-38.

(70a) Montestruc & Bertrand have successfully used “Anthiomaline” against *Schistosoma mansoni* which is widespread in Martinique, especially in the north. The anthelmintic, which is a 6% solution of lithium antimonythiomalate, is given intramuscularly every second day in doses of 1 c.c., 2 c.c., 3 c.c. for the first three and 4 c.c. for subsequent injections until 35 to 40 c.c. have been given. Most cases ceased to pass eggs after the 2nd or 3rd injection. Nine cases seen a month after the end of treatment were all free from infection. B.G.P.

71—Revue Suisse de Zoologie.

- a. JOYEUX, C. & BAER, J. G., 1936.—“Quelques helminthes nouveaux et peu connus de la musaraigne, *Crocidura russula* Herm. (Première partie, trématodes et cestodes).” 43 (2), 25-50.

(71a) In the shrew-mouse, *Crocidura russula*, Joyeux & Baer have found, in addition to numerous *Hymenolepis scalaris* and *Brachylaemus migrans*, the following rare helminths which they figure and re-describe: *Dicrocoelium soricis*, of which larval stages were vainly sought in molluscs found in the same locality; *Hymenolepis pistillum*, the larval development of which in the myriapod *Glomeris marginata* involves multiplication of scolices by external budding as in *Urocystis prolifer*; *Pseudhymenolepis redonica* which was described by these authors in 1935 [see Helm. Abs., Vol. IV, No. 224b]. B.G.P.

72—Science.

- a. JONES, M. F. & HORSFALL, M. W., 1936.—“The life history of a poultry cestode.” 83 (2152), 303-304.

(72a) Jones & Horsfall have found cysticercoids of *Railletina echinobothrida* in approximately 4% of the ant *Tetramorium caespitum* in a poultry yard in Maryland. After they were fed to clean chickens, gravid segments were passed about 20 days later and the worms were recovered at autopsy. P.A.C.

73—South African Medical Journal.

- a. WAGER, V. A., 1936.—“The possibility of eradicating bilharzia by extensive planting of the tree *Balanites*. ” 10 (1), 10-11.
- b. CAWSTON, F. G., 1936.—“Recent advances in schistosomiasis.” 10 (3), 93.

(73a) Wager finds that the fruit of the tree *Balanites Maughamii*, known as “M’Nula” and “Toortshout” in the low veld of the Eastern and Northern Transvaal, Northern Zululand and Portuguese East Africa,

contains a lethal principle with a potency as great against molluscs as *Balanites aegyptiaca* which Archibald recommends as a method of eradicating the carriers of bilharzia in the Sudan. Dilutions of 1 in 100,000 killed *Limnaea natalensis* and *Physopsis africana* in 24 hours and in some experiments 1 in 250,000 also proved fatal. It is also lethal to fish and tadpoles and on this account there is a risk of upsetting the balance of nature by a wholesale destruction of the natural enemies of mosquitoes, flies, agricultural pests and noxious insects if a large scheme of tree planting were adopted. Wager is of opinion that the tree could, however, be planted with advantage around small dams used for watering animals or for bathing purposes. R.T.L.

(73b) Cawston suggests that the preliminary dose of carbon tetrachloride frequently given as a hookworm remedy prior to the use of Fouadin may explain the apparent success of Fouadin in the treatment of schistosomiasis as this drug has a small antimony content. Attention is also drawn to the greater solubility and lower toxicity of lithium salts of antimony as compared with the potassium and sodium salts. R.T.L.

74—Southern Medical Journal.

- a. LEATHERS, W. S. & KELLER, A. E., 1936.—“Investigations concerning hookworm disease in southern states with suggestions for continued control.” 29 (2), 172-178.

(74a) Of 14,987 cases investigated between 1929-1935 by Leathers & Keller in Kentucky, Mississippi, South Carolina and Tennessee 24% had an intensity of infection of 2,600 or more eggs per gram of faeces or approximately 100 or more hookworms. In Kentucky and Tennessee the climatic conditions make it possible for hookworm larvae to develop in the soil only for a short period during the year. Yet these results indicate that hookworm in the southern United States is not a problem of the past or one that has yet been controlled. R.T.L.

75—Taiwan Igakkai Zasshi.

- a. UJIIE, N., 1936.—“On structure and development of *Echinochasmus japonicus* and its parasitism in man.” 35 (2), 535-545. [In Japanese: English summary pp. 545-546.]
- b. ABE, S., 1936.—“Some results on blood-examination for searching the existence of *Microfilaria malayi* in Japan.” 35 (3), 689-696. [In Japanese: English summary p. 697.]

(75a) *Echinochasmus japonicus* lives normally in the lower part of the small intestine of cats and dogs. It has been reported from man and the author states that he has experimentally infected himself. Rats and mice can also be infected experimentally. The encysted cercariae occur in the gills of the Cyprinoid fish *Pseudorasbora parva* and become sexually mature four days after they have been swallowed by the definitive hosts. These

trematodes give rise to slight catarrhal inflammation and are readily removed by carbon tetrachloride, nematol or ascaridol. A good illustration accompanies the text. R.T.L.

(75b) *Microfilaria* occurred in 8.52% of 915 Japanese soldiers enlisted in the districts south of Tokyo. In every case the embryos were those of *Filaria bancrofti*. *M. malayi* has not yet been found in Japan. R.T.L.

76—Tierärztliche Rundschau.

- a. MATOFF, K., 1936.—“Die experimentelle Muskeltrichinellose beim Hunde und bei der Katze.” 42 (5), 86-91; (6), 106-110.

(76a) Matoff has successfully infected young dogs and cats with small doses (down to two infective larvae) of trichinous meat. They are but slightly more susceptible than fully grown animals, the cat giving a more intense infection than the dog. The view that such large animals are less susceptible than mice and rats is probably due merely to the fact that the resulting cysts are dispersed through a much larger volume of muscle, and so are correspondingly more difficult to find. In the dog, as in most hosts, the pillars of the diaphragm are the most heavily infected site, whereas in the cat maximum intensity occurs in the costal regions of the diaphragm. B.G.P.

77—Tijdschrift voor Diergeneeskunde.

- a. VEENENDAAL, H., 1936.—“Een bij den hond afgedreven *Taenia serrata* van zeer groote lengte.” 63 (5), 260.

(77a) Within an hour of being given 15 mg. of Arecolin hydrobromide, a dog passed a *Taenia serrata* of a length no less than 3.25 metres. B.G.P.

78—Transactions of the American Microscopical Society.

- a. LYNCH, J. E., 1936.—“New species of *Neoechinorhynchus* from the Western Sucker, *Catostomus macrocheilus* Girard.” 55 (1), 21-43.
- b. LLOYD, L. C. & GUBERLET, J. E., 1936.—“*Syncoelium filiferum* (Sars) from the Pacific salmon.” 55 (1), 44-48.
- c. PARK, P. J., 1936.—“The miracidium of *Neodiplostomum lucidum* LaRue and Bosma.” 55 (1), 49-54.
- d. MUELLER, J. F., 1936.—“Studies on North American Gyrodactyloidea.” 55 (1), 55-72.
- e. INGLES, L. G., 1936.—“Worm parasites of California Amphibia.” 55 (1), 73-92.
- f. ACKERT, J. E. & REID, W. M., 1936.—“The cysticeroid of the fowl tapeworm *Railletina cesticillus*.” 55 (1), 97-100.

(78a) From 72 specimens of *Catostomus macrocheilus* Lynch has obtained, in addition to *Neoechinorhynchus crassus*, the two new species *N.*

venustus and *N. cristatus* both of which are very fully described and figured, while *N. crassus* is redescribed.

B.G.P.

(78b) The genus *Syncoelium* was created by Looss in 1899 for *S. ragazzi* Setti. Lloyd & Guberlet have found that the immature flukes named by Leuckart *Distomum filiferum* and described and figured by Sars in his work on the Schizopoda of the Challenge Expedition occur as adults on the gills of the "humpback" salmon *Onchorhynchus gorbuscha* and the "sockeye" salmon *O. nerka*.

R.T.L.

(78d) *Dactylogyrus* is essentially a European genus; the only forms found in America occur on imported fishes but species of *Gyrodactylus* occur on native fishes one of which, *G. spathulatus*, is new. Three species of *Cleidodiscus* and two of *Urocleidus* including *U. adspectus* are described. Three new genera are made viz., *Onchocleidus* n.g. type *O. ferox* (Mueller 1934) with *O. similis*, *O. mimus*, *O. helicus*, *O. acer* and *O. dispar* as new species; *Leptocleidus* n.g. with *L. megalonchus* n.sp. type and only species (this species was seen and erroneously recorded by Cooper (1915) as *Ancyrocephalus paradoxus*, Creplin); and *Tetracleidus* n.g. with *T. banghami* n.sp. as type and only species. The genus *Ancyrocephalus* is marine only and the two American species are *A. angularis* (Mueller 1934) and *A. bursatus* n.sp.

R.T.L.

(78e) Nineteen species of helminths have been collected from amphibia in California: of these ten are described as new. The introduced bullfrog has only two of its parasites in California and has not acquired any of the species which are present in native frogs.

The new species are as follows: *Megalodiscus microphagus*, *Gorgodorina aurora*, *Haematoloechus buttensis*, *Glypthelmins shastai*, *Brachycoelium lynchi*, *Halipegus aspina*, *Crepidobothrium olor*, *Rhabdias joaquinensis*, *Oswaldocruzia* (*Oswaldocruzia*) *waltomi*, *Spiromoura pretiosa*.

R.T.L.

(78f) Mature cysticercoids were obtained in 16 to 18 days in the beetle *Amara basillaris* by feeding with chicken faeces containing gravid proglottids of *Raillietina* (*Skrjabinia*) *cesticillus*. Adults took 16 days to develop from cysticercoids. A description of the cysticercoid is given.

R.T.L.

79—Tropical Agriculture.

- a. METIVIER, H. V. M., 1936.—"Some worm parasites of stock in St. Lucia." 13 (1), 8.

(79a) The following parasites collected by Metivier from domestic animals are first records for St. Lucia in the Lesser Antilles: *Fasciola hepatica*, *Paramphistomum cotylophorum*, *Haemonchus contortus*, *Ostertagia circumcincta*, *Trichostrongylus instabilis*, *Oesophagostomum columbianum*, *Setaria labiato-papillosa* and *Metastrongylus elongatus*.

D.O.M.

80—Tropical Diseases Bulletin.

- a. LANE, C., 1936.—“The carriage of schistosomes from man to man, with special attention to the molluscs which are their larval hosts in different parts of the earth.” 33 (1), 1-15.

81—Veterinary Journal.

- a. YOUNG, T. D., 1936.—“Worms in sheep.” 92 (2), 54.

(81a) Quoting Mr. Finn-Kelcey's letter in The Times, Col. Dunlop Young states that MacEwen's mixture of copper sulphate and nicotine sulphate in doses administered according to age and size of the sheep, has given amazing results in 10,000 lambs within two years. Eighty selected lambs were divided into two equal lots, one lot was treated with the mixture, the other kept as a control. The flock was grazed over notoriously infected Romney Marsh land. Of the treated lot three died of parasitic gastritis and the remainder realised £72. 12s. Of the controls eighteen died of parasitic gastritis and the remainder sold for £31. 15s.

R.T.L.

82—Veterinary Record.

- a. ASCOLI, E. W., 1936.—“Some experiences of parasitic tracheo-bronchitis in the dog, due to *Oslerus osleri*.” 16 (1), 14-16.
 b. TAYLOR, E. L., 1936.—“Addendum: attempt to produce *Oslerus* infestation by feeding possible intermediate hosts to puppies.” 16 (1), 17.
 c. OXSPRING, G. E., 1936.—“Equine debility due to *Trichostrongylus axei*.” 16 (4), 87-88.

(82a) Writing from Barnstaple Ascoli described eight cases of infection with *Oslerus osleri*. The intratracheal injection of 1 c.c. of 5% Phenol repeated after a six day interval gave relief in some cases. Microscopical examination of faeces did not prove a reliable means of diagnosis in certain cases which were found infected at post-mortem.

R.T.L.

(82b) Various invertebrates found in the premises in which dogs with *Oslerus osleri* had been kept, were examined as potential intermediate hosts but the results were negative.

R.T.L.

(82c) Oxspring found *Trichostrongylus axei* in the chronically inflamed gastric mucosa of six horses where unthriftiness and eosinophilia were the only clinical symptoms, but did not find this parasite from horses destroyed for other reasons. He suggests that *T. axei* is a responsible factor in more of the intractable debility cases of horses than has been imagined in the past.

J.W.G.L.

83—Zeitschrift für Fleisch- und Milchhygiene.

- a. KELLER, 1936.—“Untersuchungen über die Lebensfähigkeit und Invasions-tüchtigkeit der Rinderfinne bei -1° bis $-1,5^{\circ}\text{C}$.” 46 (10), 189-191.

(83a) By keeping pieces of beef, infected with *Cysticercus bovis*, at temperatures between -1° and -1.5°C . Keller shows that not all cysticerci were killed even after 23 days at this temperature, but that 50% were killed after 11 days. At such a temperature the meat is frozen and the host-capsule surrounding the cysticercus is embedded in a layer of ice-crystals, but the cysticercus itself is not frozen. Infectivity, tested by the Iwanizki method, is retained until at least the 11th day.

B.G.P.

84—Zeitschrift für Parasitenkunde.

- a. SZIDAT, L., 1936.—“Parasiten aus Seeschwalben. I. Über neue Cyathocotyliden aus dem Darm von *Sterna hirundo* L. und *Sterna paradisea*.” 8 (3), 285-316.

(84a) In numerous dead swallows, *Sterna hirundo* and *S. paradisea*, recovered near Rossitten, Szidat found heavy infections of *Cotylurus variegatus* which were apparently the cause of death. The fluke is carried by fish, in this case the sprat, *Osmerus eperlanus*. He also found several new species of Cyathocotylidae, and he here describes them and gives a revision of the family. The subfamilies and new names are as follows: PROHEMISTOMINAE with 5 genera; CYATHOCOTYLINAE with *Holostephanus lühei* n. g., n. sp. and *H. bursiformis* n. sp. in *Sterna* spp., *Cyathocotylodes curonensis* n. g., n. sp. in *Anas boschas*, and *C. dubius* n. sp. in *Sterna* spp., *Cyathocotyle oviformis* n. sp. in *S. hirundo*, and *Paracyathocotyle* n. g.; PROSOSTEPHANINAE n. subf. with *Prosostephanus* and *Duboisia* n. g.; BRAUNININAE with *Braunina*; PHARYNGOSTOMINAE n. subf. with *Pharyngostomum*; and PSEUDHEMISTOMINAE n. subf. with *Pseudhemistomum unicum* n. g., n. sp. and *P. minor* n. sp. in *Sterna* spp. [The specific name *curonensis*, though given as new, appears to be that of Szidat, 1933.]

B.G.P.

85—Zentralblatt für Bakteriologie. Abteilung I. Originale.

- a. SZIDAT, U., 1936.—“Beiträge zur Kenntnis der Trematodengattung *Notocotylus* Diesing. III. *Notocotylus linearis* (Rud. 1819?) n. sp. aus den Blinddärmen des Kiebitz (*Vanellus vanellus* L.).” 136 (3/4), 231-235.
- b. MACY, R. W., 1936.—“A new bat trematode *Lecithodendrium brackenridgei*, with a key to the species of the genus.” 136 (3/4), 236-237.
- c. TRAWINSKI, A., 1936.—“Stellungnahme zu dem Artikel ‘Zur Frage der immunobiologischen Diagnose der Trichinose’ von Hans Theiler und Donald L. Augustin aus Department of Comparative Pathology, Medical School and School of Public Health, Harvard University, Boston.” 136 (3/4), 238-241.

(85a) *Notocotylus linearis* (Rud. 1819?) n. sp. is described from *Vanellus vanellus* and a table is given of the differential characters of the eleven known species in the genus.

R.T.L.

(85b) *Lecithodendrium brackenridgei* n. sp. is described from *Pipistrellus subflavus* in Minnesota U.S.A.

R.T.L.

(85c) In the course of a recent review of precipitin and intradermal reactions in the diagnosis of trichinosis [see Helm. Abs., Vol. iv, No. 465b] Theiler & Augustine criticized some of the work of Trawiński & Maternowska [*e.g.*, see Helm. Abs., Vol. III, No. 52a; Vol. IV, No. 72d.]. Trawiński here replies to these criticisms in so far as the precipitin reaction is concerned, and reiterates his view that false positives may be produced when antigens are prepared with Coca's solution, owing to the precipitating effect of the contained phenol.

B.G.P.